

**AMENDMENTS TO THE CLAIMS:**

Kindly cancel claims 1-2, 16-31, 55-73 and 83-85, and kindly amend claims 3, 5, 7-8, 10, 32, 34-39, 74-75, 77-78 and 82 as follows:

**Listing of claims:**

1-2. (canceled)

3. (currently amended) A method of ingesting one or more data objects into a persistent archive ~~as claimed in claim 1~~, of a collection of data objects tangibly embodied on a processor readable medium, the archive comprising a self-describing, infrastructure-independent representation of a logical structure for the collection and a self-describing, infrastructure-independent representation of the data objects, the method comprising:

transforming a representation of the one or more data objects into a self-describing, infrastructure-independent representation of the one or more data objects; and

archiving the self-describing, infrastructure-independent representation of the one or more data objects with a self-describing, infrastructure-independent representation of the logical structure of the collection.

4. (original) The method of claim 3 further comprising performing the following steps prior to the transforming step:

forming a self-describing, infrastructure-independent representation of a logical structure of the collection; and

forming a self-describing, infrastructure-independent representation of the data objects.

5. (currently amended) A method of instantiating a persistent archive ~~as claimed in claim 1~~ of a collection of data objects tangibly embodied on a processor readable medium, the archive comprising a self-describing, infrastructure-independent representation of a logical structure for the collection and a self-describing, infrastructure-independent representation of the data objects, the method comprising:

retrieving from the persistent archive a self-defining representation of a logical structure for the collection;

creating on a medium a query-able mechanism in accordance with the logical structure;

retrieving from the persistent archive a self-describing, infrastructure-independent representation of one or more data objects; and  
loading the data objects into the query-able mechanism.

6. (original) The method of claim 5 further comprising:

retrieving from the persistent archive a self-describing, infrastructure-independent representation of a presentation mechanism for the one or more data objects;  
querying the query-able mechanism for one or more data objects; and  
presenting the one or more data objects using the presentation mechanism.

7. (currently amended) A method of presenting one or more data objects from a persistent archive ~~as claimed in claim 1~~ of a collection of data objects tangibly embodied on a processor readable medium, the archive comprising a self-describing, infrastructure-independent representation of a logical structure for the collection and a self-describing, infrastructure-independent representation of the data objects, the method comprising:

retrieving from the persistent archive a self-describing, infrastructure-independent representation of a presentation mechanism for the one or more data objects;  
retrieving from the persistent archive a self-describing, infrastructure-independent representation of the one or more data objects; and  
presenting the one or more data objects using the presentation mechanism.

8. (currently amended) A method of migrating a persistent archive ~~as claimed in claim 1, of~~ a collection of data objects tangibly embodied on a processor readable medium, the archive comprising a self-describing, infrastructure-independent representation of a logical structure for the collection and a self-describing, infrastructure-independent representation of the data objects, the archive being maintained on a first medium, the method comprising:

retrieving the persistent archive maintained on the first medium;  
optionally redefining the logical structure of the collection or the self-describing, infrastructure-independent representation of the one or more data objects; and  
storing the persistent archive as optionally redefined in the previous step onto a second medium.

9. (original) A processor readable medium tangibly embodying the method steps of any of claims 3-8.
10. (currently amended) A system for maintaining a persistent archive ~~as claimed in claim 1~~ of a collection of data objects tangibly embodied on a processor readable medium, the archive comprising a self-describing, infrastructure-independent representation of a logical structure for the collection and a self-describing, infrastructure-independent representation of the data objects, comprising:
- an ingestion subsystem for ingesting one or more data objects into the archive by transforming a representation of the one or more data objects into the self-defining representation of the one or more data objects, and adding the one or more transformed data objects to the archive; and
  - an instantiation subsystem for retrieving from the archive the self-describing, infrastructure-independent representation of a logical structure for the collection, creating a query-able mechanism on a processor readable medium in accordance with the logical structure, and loading the data objects into the query-able mechanism.
11. (original) The system of claim 10 further comprising a migration subsystem for retrieving the persistent archive from a first medium, optionally redefining the logical structure of the collection or the self-describing, infrastructure-independent representation of the one or more data objects in the collection, and storing the persistent archive as optionally redefined onto a second medium.
12. (original) The system of claim 10 further comprising a presentation subsystem for retrieving from the archive a self-describing, infrastructure-independent presentation mechanism, retrieving from the archive one or more data objects, and presenting the one or more data objects using the self-describing, infrastructure-independent presentation mechanism.
13. (original) The system of claim 10 further comprising a presentation subsystem for retrieving from the archive a self-describing, infrastructure-independent presentation mechanism, querying the query-able mechanism for one or more data objects, and presenting the one or more data objects using the self-describing, infrastructure-independent presentation mechanism.

14. (original) The system of claim 10 wherein the instantiation system includes a plurality of drivers each configured for retrieving data from or storing data to a processor readable medium.

15. (original) The system of claim 11 wherein the migration system includes a plurality of drivers each configured for retrieving data from or storing data to a processor readable medium.

16-31. (canceled)

32. (currently amended) A method of ingesting one or more data objects into a knowledge-based persistent archive ~~as claimed in claim 16~~, of a collection of data objects tangibly embodied on a processor readable medium, the archive comprising a self-describing, infrastructure-independent representation of a logical structure for the collection, a self-describing, infrastructure-independent representation of the data objects, and a self-describing, infrastructure-independent representation of knowledge relevant to the collection, the method comprising:

transforming a representation of the one or more data objects into a self-describing, infrastructure-independent representation of the one or more data objects;

verifying the transformation of the data objects using knowledge relevant to the collection; and

archiving the verified self-describing, infrastructure-independent representation of the one or more data objects with a self-describing, infrastructure-independent representation of a logical structure of the collection and a self-describing, infrastructure-independent representation of the knowledge relevant to the collection.

33. (original) The method of claim 32 wherein the transforming step comprises tagging attributes of the data objects, and the verifying step comprises tagging occurrences of data object attributes and their corresponding values and verifying that these occurrences are consistent with the knowledge relevant to the collection.

34. (currently amended) A method of instantiating a knowledge-based persistent archive as ~~claimed in claim 16~~ of a collection of data objects tangibly embodied on a processor readable medium, the archive comprising a self-describing, infrastructure-independent representation of a logical structure for the collection, a self-describing, infrastructure-independent representation of

the data objects, and a self-describing, infrastructure-independent representation of knowledge relevant to the collection, the method comprising:

- retrieving from the persistent archive a self-defining, infrastructure-independent representation of a logical structure for the collection;
- retrieving from the persistent archive a self-describing, infrastructure-independent representation of knowledge relevant to the collection;
- creating on a medium a query-able mechanism in accordance with the logical structure;
- retrieving from the persistent archive a self-describing, infrastructure-independent representation of one or more data objects;
- verifying that the one or more data objects are consistent with the knowledge relevant to the collection; and
- loading the data objects into the query-able mechanism.

35. (currently amended) The method of claim 34 further comprising:

- retrieving from the persistent archive a self-describing, infrastructure-independent representation of a presentation mechanism for the one or more data objects;
- querying the query-able mechanism for one or more data objects using [[the]] relationships between concepts relevant to the collection;
- verifying that the one or more data objects are consistent with the knowledge relevant to the collection; and
- presenting the one or more data objects using the presentation mechanism.

36. (currently amended) A method of validating a knowledge-based persistent archive as ~~claimed in claim 16,~~ of a collection of data objects tangibly embodied on a processor readable medium, the archive comprising a self-describing, infrastructure-independent representation of a logical structure for the collection, a self-describing, infrastructure-independent representation of the data objects, and a self-describing, infrastructure-independent representation of knowledge relevant to the collection, the method comprising:

- retrieving from the archive a self-describing, infrastructure-independent representation of knowledge relevant to the collection; and
- using the knowledge to validate the collection.

37. (currently amended) A method of transforming raw data records into a form capable of ingestion into a knowledge-based persistent archive ~~as claimed in claim 16~~ of a collection of data objects tangibly embodied on a processor readable medium, the archive comprising a self-describing, infrastructure-independent representation of a logical structure for the collection, a self-describing, infrastructure-independent representation of the data objects, and a self-describing, infrastructure-independent representation of knowledge relevant to the collection, which archive includes as the knowledge base a self-describing, infrastructure independent, or executable representation of a transformation procedure, the method comprising:

retrieving from the archive the self-describing, infrastructure independent, or executable representation of the transformation procedure;

executing the procedure to transform the raw records into a self-describing, infrastructure independent representation of data objects; and

adding the self-describing, infrastructure independent representation of the data objects to the archive.

38. (currently amended) A method of transforming a self-describing, infrastructure independent representation of data objects into a form capable of instantiation onto a query-able mechanism, the data objects being from a knowledge-based persistent archive ~~as claimed in claim 16~~ of a collection of data objects tangibly embodied on a processor readable medium, the archive comprising a self-describing, infrastructure-independent representation of a logical structure for the collection, a self-describing, infrastructure-independent representation of the data objects, and a self-describing, infrastructure-independent representation of knowledge relevant to the collection, which archive includes as the knowledge base a self-describing, infrastructure independent, or executable representation of a transformation procedure, the method comprising:

retrieving from the archive the self-describing, infrastructure independent, or executable representation of the transformation procedure;

retrieving from the archive the self-describing, infrastructure independent representation of the data objects; and

executing the procedure to transform the self-describing, infrastructure independent representation of the data objects into a form capable of instantiating onto a query-able mechanism.

39. (currently amended) A method of transforming a self-describing, infrastructure independent representation of data objects into occurrences of attribute or element values, the data objects being from a knowledge-based persistent archive ~~as claimed in claim 16~~ of a collection of data objects tangibly embodied on a processor readable medium, the archive comprising a self-describing, infrastructure-independent representation of a logical structure for the collection, a self-describing, infrastructure-independent representation of the data objects, and a self-describing, infrastructure-independent representation of knowledge relevant to the collection, which archive includes as the knowledge base a self-describing, infrastructure independent, or executable representation of a transformation procedure, the method comprising:

retrieving from the archive the self-describing, infrastructure independent, or executable representation of the transformation procedure;

retrieving from the archive the self-describing, infrastructure independent representation of the data objects; and

executing the procedure to transform the self-describing, infrastructure independent representation of the data objects into the occurrences of attribute or element values.

40. (original) The method of claim 39 further comprising using the occurrences to validate the collection.

41. (original) The method of claim 39 further comprising using the occurrences to identify exceptional conditions which are added to the knowledge base of the archive.

42-73. (canceled)

74. (currently amended) A method of automatically placing one or more data objects from a knowledge-based persistent archive of a collection of data objects tangibly embodied on a processor readable medium ~~as claimed in claim 55~~ into a form suitable for instantiation onto a query-able mechanism, the archive comprising at least one representation of the collection of

data objects, at least one self-describing, infrastructure-independent or executable specification of one or more transformations relating to the collection, and at least one self-describing, infrastructure-independent or executable specification of one or more rules encoding knowledge relevant to the collection, the method comprising:

retrieving from the archive a self-describing, infrastructure-independent or executable specification of one or more transformations relevant to the collection;

retrieving from the archive a representation of one or more data objects in the collection;  
and

executing the specification to automatically place the one or more data objects into a form suitable for instantiation onto the query-able mechanism.

75. (currently amended) A method of automatically validating a collection of data objects within a knowledge-based persistent archive as claimed in claim 55 of a collection of data objects tangibly embodied on a processor readable medium, the archive comprising at least one representation of the collection of data objects, at least one self-describing, infrastructure-independent or executable specification of one or more transformations relating to the collection, and at least one self-describing, infrastructure-independent or executable specification of one or more rules encoding knowledge relevant to the collection, the method comprising:

retrieving from the archive a self-describing, infrastructure-independent or executable specification of one or more rules relevant to the collection; and  
executing the specification to automatically validate the collection.

76. (original) The method of claim 75 further comprising validating the collection by performing the following substeps:

producing occurrences of attribute or element values; and  
determining that the occurrences are consistent with the rules encoded by the specification and any valid exceptions.

77. (currently amended) A method of automatically presenting one or more data objects from a knowledge-based persistent archive as claimed in claim 55 of a collection of data objects tangibly embodied on a processor readable medium, the archive comprising at least one representation of the collection of data objects, at least one self-describing, infrastructure-



independent or executable specification of one or more transformations relating to the collection, and at least one self-describing, infrastructure-independent or executable specification of one or more rules encoding knowledge relevant to the collection, the method comprising:

retrieving from the archive a self-describing, infrastructure-independent or executable specification of one or more transformations relevant to the collection;

retrieving from the archive a representation of the one or more data objects in the collection; and

executing the specification to automatically place the one or more data objects from the collection in a form suitable for presentation.

78. (currently amended) A method of automatically placing a knowledge-based persistent archive as claimed in claim 55 of a collection of data objects tangibly embodied on a processor readable medium into a form suitable for migration to a new medium, the archive comprising at least one representation of the collection of data objects, at least one self-describing, infrastructure-independent or executable specification of one or more transformations relating to the collection, and at least one self-describing, infrastructure-independent or executable specification of one or more rules encoding knowledge relevant to the collection, the method comprising:

retrieving from the archive a self-describing, infrastructure-independent or executable specification of one or more transformations relevant to the collection; and

executing the specification to automatically place the collection into a form suitable for migration to a new medium.

79. (original) The system of claim 10 further comprising an engine for executing self-describing, infrastructure-independent, or executable specifications.

80. (original) The system of claim 79 further comprising a validation subsystem for validating the collection by commanding the engine to execute at least one self-describing, infrastructure-independent or executable specification encoding one or more rules relevant to the collection.

81. (original) The system of claim 79 further comprising a transformation subsystem for transforming one or more data objects in the collection by commanding the engine to execute at least one self-describing, infrastructure-independent, or executable specification of one or more transformations relevant to the collection.

82. (currently amended) The ~~methods~~ method of any of claims 74-78 tangibly embodied on a processor-readable medium.

83-85. (canceled)